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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,346	07/02/2004	Hon-Yuan Leo	12851-US-PA	4345
31561	7590	01/19/2007	EXAMINER	
JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE			XIAO, KE	
7 FLOOR-1, NO. 100			ART UNIT	PAPER NUMBER
ROOSEVELT ROAD, SECTION 2			2629	
TAIPEI, 100				
TAIWAN				
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	01/19/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/710,346	LEO ET AL.	
	Examiner Ke Xiao	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 02 July 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-13 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-13 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7-10 and 13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Masuda (US 5,012,228).

Regarding independent **Claim 1**, Masuda teaches a liquid crystal panel (Masuda, Col. 7 lines 60-65), comprising:

a display area having MxN pixel for providing MxN resolution, each of the pixels including K sub-pixels (Masuda, Figs. 6-10, Fig. 10 is a 4x2 array in delta configuration);
a row driver having IxN scan lines coupled to the display area (Masuda, Figs. 6-10, Fig. 10 with 4 scan lines); and

a column driver having JxM data lines coupled to the display area for cooperating with the row drive to complete driving M pixels on a same row in the display area after the row driver scans I times (Masuda, Figs. 6-10, Fig. 10 with 6 data lines), wherein IxJ = K, and 1 < I,J < K (Masuda, Fig. 6-10, I = 2, J = 1.5, K = 3).

Regarding independent **Claim 7**, Masuda teaches a method for driving a liquid crystal panel (Masuda, Col. 7 lines 60-65) having a display area having MxN pixels

providing $M \times N$ resolution, each of the pixels including K sub-pixels (Masuda, Figs. 6-10, Fig. 10 is a 4×2 array in delta configuration), the method comprising:

scanning $I \times N$ scan lines in the display area in sequence (Masuda, Figs. 6-10, Fig. 10 with 4 scan lines);

and providing $J \times M$ sub-pixel data to $J \times M$ data lines in the display area after scanning each of the $I \times N$ scan lines to complete driving M pixels on a same row in the display area after scanning the scan lines for I times (Masuda, Figs. 6-10, Fig. 10 with 6 data lines which is 1.5×4 pixels);

wherein $I \times J = K$, and $1 < I, J < K$ (Masuda, Fig. 6-10, $I = 2$, $J = 1.5$, $K = 3$).

Regarding **Claims 2 and 8**, Masuda further teaches that K is 3, I is 2 and J is 1.5 (Masuda, Fig. 6-10, $I = 2$, $J = 1.5$, $K = 3$).

Regarding **Claim 3**, Masuda further teaches that the column driver includes:

an even column driver for driving an even portion of the $J \times M$ data lines in the display area (Masuda, Fig. 8 element 11 right); and

an odd column driver for driving an odd portion of the $J \times M$ data lines in the display area (Masuda, Fig. 8 element 11 left).

Regarding **Claim 4**, Masuda further teaches that the row driver includes:

an even row driver for driving an even portion of the $I \times N$ scan lines in the display area (Masuda, Fig. 8 element 12 bottom); and

an even row driver for driving an even portion of the $I \times N$ scan lines in the display area (Masuda, Fig. 8 element 12 top).

Regarding **Claim 5**, Masuda further teaches that the MxN pixels are arranged in a delta manner (Masuda, Fig. 10, Col. 7 line 61 to Col. 8 line 4).

Regarding **Claims 9 and 10**, Masuda further teaches the step of scanning the IxN scan lines comprises scanning the IxN scan lines in sequence from top to bottom and from bottom to top (Masuda, Col. 2 lines 36-60, Col. 3 lines 35-61).

Regarding **Claim 13**, Masuda further teaches a timing sequence driving method for a timing sequence control circuit, the timing sequence driving method at least comprising the method for driving the liquid crystal panel of Claim 7 (Masuda, Col. 2 lines 60-68, Fig. 8 driving circuits).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda (US 5,012,228) in view of the applicant's admitted prior art (AAPA).

Regarding **Claim 6**, Masuda fails to teach a liquid crystal display projector system comprising the liquid crystal panel of Claim 1. The AAPA teaches that it is well known in the art to use liquid crystal display systems in projection systems (AAPA, Pg. 1 paragraph [0010]). It would have been obvious to one of ordinary skill in the art at the

time of the invention to use the liquid crystal display panel of Masuda in a projection system as taught by Masuda in order to more easily realize a larger display.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda (US 5,012,228).

Regarding **Claims 11 and 12**, Masuda teaches wherein the step of providing the JxM sub-pixel data to the JxM data lines comprises providing the JxM sub-pixel data to the JxM data lines sequentially (Masuda, Col. 10 lines 48-56). Masuda fails to teach specifically that the data is provided from left to right or from right to left. Since the applicant has failed to disclose that the direction of scanning provides an advantage, is used for a particular purpose, or solves a stated problem, it is an obvious matter of design choice to have provided the data sequentially in either left to right or right to left direction as claimed. Therefore it would have been obvious to one of ordinary art at the time of the invention to provide the data from left to right or from right to left because it would have accomplished the purpose of displaying the image data equally as well.

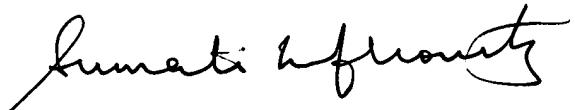
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ke Xiao whose telephone number is (571) 272-7776. The examiner can normally be reached on Monday through Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

November 3rd, 2006 - kx -



SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER